

Aglaia (47).

Mean Solar Time of Observation.	R.A. from Observation.	N.P.D. from Observation.
h m s	h m s	° ' "
1862, Sept. 22 12 48 2.2	0 54 30.10	83 23 40.08

Doris (49).

Mean Solar Time of Observation.	R.A. from Observation.	N.P.D. from Observation.
h m s	h m s	° ' "
1862, July 19 12 28 6.5	20 18 15.04	101 3 11.11
31 11 31 50.3	20 9 8.23	101 42 25.34
Aug. 7 10 59 14.1	20 4 2.63	102 8 7.76
19 10 4 31.3	19 56 29.43	102 53 33.09
22 9 51 12.9	19 54 58.60	103 4 57.07
25 9 37 58.4	19 53 31.61	103 15 57.14

All the observations of N.P.D. are corrected for refraction and parallax.

Occultations of Stars by the Moon.

Day of Obs.	Phenomenon.	Moon's Limb.	Mean Solar Time.	Observer.
			h m s	
1862, July 15	π Piscium reapp. (a)	Dark	11 25 20.6	E.
15	9 Piscium reapp. (a)	Dark	11 30 22.8	E.
21	ν Tauri reapp.	Dark	14 56 59.3	T. C.
Sept. 3	π Sagittarii disapp.	Dark	11 45 23.2	C.

(a) Observed through thin cloud; considered true to a second.

The initials E., C., and T. C., are those of Mr. Ellis, Mr. Criswick, and Mr. Chappell.

The egress of *Jupiter's* third Satellite was observed on June 16, by Mr. Ellis, to take place at 10^h 22^m 17^s 2, M.S.T.

Measures of the Planet Mars, made, at the Opposition of 1862, with the Heliometer at the Radcliffe Observatory, Oxford, for the Determination of the Ellipticity of the Disk. By the Rev. R. Main. (Abstract.)

This paper, which is accompanied by eleven drawings of the planet *Mars*, gives the results of eighteen sets of measures made by Mr. Main for the purpose of determining the ellipticity and size of the planet. Each set of observations consists of at least ten measures of the polar, and ten of the equatorial diameter, and each result is rigorously corrected for defective

illumination of the disk in the direction of each diameter, and for the corresponding effects of refraction.

The results arrived at are as follows:—

Day, 1862.	Corrected Equatoreal Diameter.	Corrected Polar Diameter.	Ellipticity.		Equatoreal Diameter at Unit of Distance.
Sept. 18	22"386	21"872	0.02296	$\frac{1}{43.55}$	9"25
19	22.987	22.374	.02667	$\frac{1}{37.50}$	9.47
22	22.978	22.729	.01084	$\frac{1}{92.28}$	9.39
23	22.914	22.162	.03282	$\frac{1}{30.47}$	9.34
25	23.112	22.576	.02319	$\frac{1}{43.12}$	9.39
27	23.131	22.543	.02542	$\frac{1}{39.34}$	9.39
30	23.018	22.924	.00408	$\frac{1}{244.87}$	9.35
Oct. 8	22.674	22.208	.02055	$\frac{1}{48.66}$	9.38
9	22.780	22.314	.02046	$\frac{1}{48.88}$	9.46
11	22.564	22.230	.01480	$\frac{1}{67.56}$	9.45
15	21.734	21.385	.01606	$\frac{1}{62.28}$	9.31
16	21.668	21.296	.01717	$\frac{1}{58.25}$	9.34
17	21.659	20.938	.03507	$\frac{1}{28.51}$	9.42
18	21.495	20.828	.03103	$\frac{1}{32.23}$	9.39
20	21.034	20.775	.01231	$\frac{1}{81.21}$	9.33
22	20.830	20.419	.01973	$\frac{1}{50.68}$	9.39
23	20.774	20.267	.02556	$\frac{1}{39.12}$	9.44
26	19.942	19.389	.02773	$\frac{1}{36.06}$	9.31
Means	0.02147	$\frac{1}{46.58}$	9.38

The ellipticity requires correction for the depression of the Earth below the plane of the equator of *Mars*. When this correction is applied, the ellipticity is finally $\frac{1}{39.04}$.

The angular diameter at the unit of distance, namely, $9''.38$, corresponds to a real diameter of 4332 miles, but this still requires correction for the effect of irradiation. For the determination of the irradiation, Mr. Main proposes to make observations when the disk of *Mars* has become small.

Places derived from Observations of Comet II., 1862, made with the Heliometer at the Radcliffe Observatory, Oxford.
By the Rev. R. Main.

Day, 1862.	Greenwich	Apparent R.A.	Apparent N.P.D.
	Mean Solar Time.		
	^h ^m ^s	^h ^m ^s	[°] ['] ["]
Aug. 5	9 47 4.0	6 22 30.07	13 54 8.5
"	10 50 33.6	6 22 47.52	13 52 5.7
7	10 7 18.7	6 41 39.76	12 27 27.6
9	9 29 3.4	7 9 12.24	10 58 10.3
"	9 47 36.3	7 9 29.07	10 57 35.2
"	10 17 8.5	7 9 46.80	10 56 46.9
"	10 31 9.2	7 9 55.67	10 56 8.0
"	10 40 23.4	7 10 2.31	
"	10 48 14.9	7 10 9.44	10 55 46.4
"	11 1 23.2	7 10 18.41	10 55 19.0
14	8 59 7.2	9 42 3.32	8 0 3.3
18	10 55 26.9	12 57 38.98	10 55 12.0
19	11 21 32.6	13 31 51.60	13 13 46.0
22	9 30 26.2	14 35 49.24	21 2 46.9
"	9 49 40.7	14 36 1.31	21 5 3.1
"	10 13 21.2	14 36 16.01	21 8 29.0
"	10 27 41.9	14 36 25.30	21 10 20.3
23	9 47 30.1	14 49 59.60	24 41 36.5
25	9 53 43.8	15 12 9.44	33 14 38.6
29	8 51 22.9	15 36 43.24	54 37 19.8
"	9 11 38.1	15 36 46.05	54 42 30.9
"	9 37 15.2	15 36 52.64	54 48 51.8
"	9 50 20.5	15 36 54.11	54 52 3.7
"	10 8 10.4	15 36 57.17	54 56 17.8
"	10 31 30.1	15 37 2.18	55 1 46.9

Assumed Mean Places of the Stars employed for Comparison.

Day of Obs.	Star's Name.	Mean R.A.	Mean N.P.D.
		1862, Jan. 1.	1862, Jan. 1.
		^h ^m ^s	[°] ['] ["]
Aug. 7	B.A.C. 2210	6 39 53.16	12 51 22.0
9	B.A.C. 2210		
"	Radcliffe 1928	7 11 28.81	11 2 20.5